

5000

RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.

Application Serial Number: 10/522, 8/0
Source: PCT
Date Processed by STIC: 2-8-05

ENTERED



PCT

RAW SEQUENCE LISTING

DATE: 02/08/2005

PATENT APPLICATION: US/10/522,810

TIME: 11:35:07

Input Set : A:\transmolecular5008wo.txt

Output Set: N:\CRF4\02082005\J522810.raw

```

3 <110> APPLICANT: ALVAREZ, Vernon L.
4     GONDA, Matthew A.
6 <120> TITLE OF INVENTION: Treatment of Cell Proliferative Disorders with Chlorotoxin
8 <130> FILE REFERENCE: 51530-5008-WO
C--> 10 <140> CURRENT APPLICATION NUMBER: US/10/522,810
C--> 10 <141> CURRENT FILING DATE: 2005-01-31
10 <150> PRIOR APPLICATION NUMBER: US 60/406,033
11 <151> PRIOR FILING DATE: 2002-08-27
13 <150> PRIOR APPLICATION NUMBER: US 60/384,171
14 <151> PRIOR FILING DATE: 2002-05-31
16 <160> NUMBER OF SEQ ID NOS: 95
18 <170> SOFTWARE: PatentIn version 3.2
20 <210> SEQ ID NO: 1
21 <211> LENGTH: 36
22 <212> TYPE: PRT
23 <213> ORGANISM: Leiurus quinquestriatus
26 <220> FEATURE:
27 <221> NAME/KEY: misc_feature
28 <223> OTHER INFORMATION: Chlorotoxin
30 <400> SEQUENCE: 1
32 Met Cys Met Pro Cys Phe Thr Thr Asp His Gln Met Ala Arg Lys Cys
33 1             5             10             15
36 Asp Asp Cys Cys Gly Gly Lys Gly Arg Gly Lys Cys Tyr Gly Pro Gln
37             20             25             30
40 Cys Leu Cys Arg
41             35
44 <210> SEQ ID NO: 2
45 <211> LENGTH: 42
46 <212> TYPE: PRT
47 <213> ORGANISM: Leiurus quinquestriatus
49 <400> SEQUENCE: 2
51 His His His His His His Met Cys Met Pro Cys Phe Thr Thr Asp His
52 1             5             10             15
55 Gln Met Ala Arg Lys Cys Asp Asp Cys Cys Gly Gly Lys Gly Arg Gly
56             20             25             30
59 Lys Cys Tyr Gly Pro Gln Cys Leu Cys Arg
60             35             40
63 <210> SEQ ID NO: 3
64 <211> LENGTH: 37
65 <212> TYPE: PRT
66 <213> ORGANISM: Leiurus quinquestriatus
68 <400> SEQUENCE: 3
70 Tyr Met Cys Met Pro Cys Phe Thr Thr Asp His Gln Met Ala Arg Lys

```

RAW SEQUENCE LISTING

DATE: 02/08/2005

PATENT APPLICATION: US/10/522,810

TIME: 11:35:07

Input Set : A:\transmolecular5008wo.txt

Output Set: N:\CRF4\02082005\J522810.raw

```

71 1          5          10          15
74 Cys Asp Asp Cys Cys Gly Gly Lys Gly Arg Gly Lys Cys Tyr Gly Pro
75          20          25          30
78 Gln Cys Leu Cys Arg
79          35
82 <210> SEQ ID NO: 4
83 <211> LENGTH: 39
84 <212> TYPE: PRT
85 <213> ORGANISM: Leiurus quinquestriatus
87 <400> SEQUENCE: 4
89 Tyr Ser Tyr Met Cys Met Pro Cys Phe Thr Thr Asp His Gln Met Ala
90 1          5          10          15
93 Arg Lys Cys Asp Asp Cys Cys Gly Gly Lys Gly Arg Gly Lys Cys Tyr
94          20          25          30
97 Gly Pro Gln Cys Leu Cys Arg
98          35
101 <210> SEQ ID NO: 5
102 <211> LENGTH: 36
103 <212> TYPE: PRT
104 <213> ORGANISM: Artificial sequence
106 <220> FEATURE:
107 <223> OTHER INFORMATION: Chlorotoxin variant
109 <400> SEQUENCE: 5
111 Met Cys Met Pro Cys Phe Thr Thr Asp His Gln Met Ala Arg Lys Cys
112 1          5          10          15
115 Asp Asp Cys Cys Gly Gly Lys Gly Arg Gly Lys Cys Phe Gly Pro Gln
116          20          25          30
119 Cys Leu Cys Arg
120          35
123 <210> SEQ ID NO: 6
124 <211> LENGTH: 35
125 <212> TYPE: PRT
126 <213> ORGANISM: Artificial sequence
128 <220> FEATURE:
129 <223> OTHER INFORMATION: Chlorotoxin variant
131 <400> SEQUENCE: 6
133 Arg Cys Lys Pro Cys Phe Thr Thr Asp Pro Gln Met Ser Lys Lys Cys
134 1          5          10          15
137 Ala Asp Cys Cys Gly Gly Lys Gly Lys Gly Lys Cys Tyr Gly Pro Gln
138          20          25          30
141 Cys Leu Cys
142          35
145 <210> SEQ ID NO: 7
146 <211> LENGTH: 38
147 <212> TYPE: PRT
148 <213> ORGANISM: Artificial sequence
150 <220> FEATURE:
151 <223> OTHER INFORMATION: Chlorotoxin variant
153 <400> SEQUENCE: 7

```

RAW SEQUENCE LISTING

DATE: 02/08/2005

PATENT APPLICATION: US/10/522,810

TIME: 11:35:07

Input Set : A:\transmolecular5008wo.txt

Output Set: N:\CRF4\02082005\J522810.raw

```

155 Arg Cys Ser Pro Cys Phe Thr Thr Asp Gln Gln Met Thr Lys Lys Cys
156 1          5          10          15
159 Tyr Asp Cys Cys Gly Gly Lys Gly Lys Gly Lys Cys Tyr Gly Pro Gln
160          20          25          30
163 Cys Ile Cys Ala Pro Tyr
164          35
167 <210> SEQ ID NO: 8
168 <211> LENGTH: 7
169 <212> TYPE: PRT
170 <213> ORGANISM: Leiurus quinquestriatus
173 <220> FEATURE:
174 <221> NAME/KEY: misc_feature
175 <223> OTHER INFORMATION: Derivative of Chlorotoxin: amino acid residues 23-29
177 <400> SEQUENCE: 8
179 Lys Gly Arg Gly Lys Ser Tyr
180 1          5
183 <210> SEQ ID NO: 9
184 <211> LENGTH: 7
185 <212> TYPE: PRT
186 <213> ORGANISM: Leiurus quinquestriatus
189 <220> FEATURE:
190 <221> NAME/KEY: misc_feature
191 <223> OTHER INFORMATION: Derivative of Chlorotoxin: amino acid residues 8-14
193 <400> SEQUENCE: 9
195 Thr Asp His Gln Met Ala Arg
196 1          5
199 <210> SEQ ID NO: 10
200 <211> LENGTH: 9
201 <212> TYPE: PRT
202 <213> ORGANISM: Artificial sequence
204 <220> FEATURE:
205 <223> OTHER INFORMATION: Chlorotoxin alpha peptide
207 <400> SEQUENCE: 10
209 Thr Asp His Gln Met Ala Arg Lys Ser
210 1          5
213 <210> SEQ ID NO: 11
214 <211> LENGTH: 9
215 <212> TYPE: PRT
216 <213> ORGANISM: Artificial sequence
218 <220> FEATURE:
219 <223> OTHER INFORMATION: Variant of chlorotoxin alpha peptide
221 <400> SEQUENCE: 11
223 Thr Ala His Ala Met Ala Arg Lys Ser
224 1          5
227 <210> SEQ ID NO: 12
228 <211> LENGTH: 36
229 <212> TYPE: PRT
230 <213> ORGANISM: Artificial sequence
232 <220> FEATURE:

```

RAW SEQUENCE LISTING

DATE: 02/08/2005

PATENT APPLICATION: US/10/522,810

TIME: 11:35:07

Input Set : A:\transmolecular5008wo.txt

Output Set: N:\CRF4\02082005\J522810.raw

233 <223> OTHER INFORMATION: Variant peptide of chlorotoxin
 235 <400> SEQUENCE: 12
 237 Met Cys Met Pro Cys Phe Thr Thr Ala His Ala Met Ala Arg Lys Cys
 238 1 5 10 15
 241 Asp Asp Cys Cys Gly Gly Lys Gly Arg Cys Lys Cys Tyr Gly Pro Gln
 242 20 25 30
 245 Cys Leu Cys Arg
 246 35
 249 <210> SEQ ID NO: 13
 250 <211> LENGTH: 9
 251 <212> TYPE: PRT
 252 <213> ORGANISM: Artificial
 254 <220> FEATURE:
 255 <223> OTHER INFORMATION: motif for chlorotoxin derivatives
 258 <220> FEATURE:
 259 <221> NAME/KEY: MISC_FEATURE
 260 <222> LOCATION: (1)..(9)
 261 <223> OTHER INFORMATION: Xaa at position 3 = Asn or Glu; Xaa at position 4 = Ala,
 Arg,
 262 Asn, Asp, Cys, Gln, Glu, Gly, His, Ile, Leu, Lys, Met, Phe, Ser,
 263 Thr, Trp, Tyr or Val; Xaa at position 5 = Asn or Gln; Xaa at
 264 position 7 = Ser or Thr; Xaa at position 8 = His, Lys or Arg.
 266 <400> SEQUENCE: 13
 W--> 268 Thr Thr Xaa Xaa Xaa Met Xaa Xaa Lys
 269 1 5
 272 <210> SEQ ID NO: 14
 273 <211> LENGTH: 9
 274 <212> TYPE: PRT
 275 <213> ORGANISM: Leiurus quinquestriatus
 277 <400> SEQUENCE: 14
 279 Thr Thr Asp His Gln Met Ala Arg Lys
 280 1 5
 283 <210> SEQ ID NO: 15
 284 <211> LENGTH: 35
 285 <212> TYPE: PRT
 286 <213> ORGANISM: Mesobuthus tamulus
 288 <400> SEQUENCE: 15
 290 Arg Cys Lys Pro Cys Phe Thr Thr Asp Pro Gln Met Ser Lys Lys Cys
 291 1 5 10 15
 294 Ala Asp Cys Cys Gly Gly Lys Gly Lys Gly Lys Cys Tyr Gly Pro Gln
 295 20 25 30
 298 Cys Leu Cys
 299 35
 302 <210> SEQ ID NO: 16
 303 <211> LENGTH: 34
 304 <212> TYPE: PRT
 305 <213> ORGANISM: Artificial sequence
 307 <220> FEATURE:
 308 <223> OTHER INFORMATION: Small Toxin consensus sequence
 311 <220> FEATURE:

RAW SEQUENCE LISTING

DATE: 02/08/2005

PATENT APPLICATION: US/10/522,810

TIME: 11:35:07

Input Set : A:\transmolecular5008wo.txt

Output Set: N:\CRF4\02082005\J522810.raw

```

312 <221> NAME/KEY: MISC_FEATURE
313 <222> LOCATION: (2)..(2)
314 <223> OTHER INFORMATION: Xaa can be Met or Lys
316 <220> FEATURE:
317 <221> NAME/KEY: MISC_FEATURE
318 <222> LOCATION: (9)..(9)
319 <223> OTHER INFORMATION: Xaa can be His or Pro
321 <220> FEATURE:
322 <221> NAME/KEY: MISC_FEATURE
323 <222> LOCATION: (16)..(16)
324 <223> OTHER INFORMATION: Xaa can be Asp or Ala
326 <400> SEQUENCE: 16
W--> 328 Cys Xaa Pro Cys Phe Thr Thr Asp Xaa Gln Met Ala Lys Lys Cys Xaa
329 1 5 10 15
332 Asp Cys Cys Gly Gly Lys Gly Lys Gly Lys Cys Tyr Gly Pro Gln Cys
333 20 25 30
336 Leu Cys
340 <210> SEQ ID NO: 17
341 <211> LENGTH: 38
342 <212> TYPE: PRT
343 <213> ORGANISM: Leiurus quinquestriatus
345 <400> SEQUENCE: 17
347 Arg Cys Ser Pro Cys Phe Thr Thr Asp Gln Gln Met Thr Lys Lys Cys
348 1 5 10 15
351 Tyr Asp Cys Cys Gly Gly Lys Gly Lys Gly Lys Cys Tyr Gly Pro Gln
352 20 25 30
355 Cys Ile Cys Ala Pro Tyr
356 35
359 <210> SEQ ID NO: 18
360 <211> LENGTH: 34
361 <212> TYPE: PRT
362 <213> ORGANISM: Artificial sequence
364 <220> FEATURE:
365 <223> OTHER INFORMATION: Probable Toxin LQH 8/6 consensus sequence
368 <220> FEATURE:
369 <221> NAME/KEY: MISC_FEATURE
370 <222> LOCATION: (2)..(2)
371 <223> OTHER INFORMATION: Xaa can be Met or Ser
373 <220> FEATURE:
374 <221> NAME/KEY: MISC_FEATURE
375 <222> LOCATION: (9)..(9)
376 <223> OTHER INFORMATION: Xaa can be His or Gln
378 <220> FEATURE:
379 <221> NAME/KEY: MISC_FEATURE
380 <222> LOCATION: (12)..(12)
381 <223> OTHER INFORMATION: Xaa can be Ala or Thr
383 <220> FEATURE:
384 <221> NAME/KEY: MISC_FEATURE
385 <222> LOCATION: (16)..(16)

```

RAW SEQUENCE LISTING ERROR SUMMARY
 PATENT APPLICATION: US/10/522,810

DATE: 02/08/2005
 TIME: 11:35:08

Input Set : A:\transmolecular5008wo.txt
 Output Set : N:\CRF4\02082005\J522810.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:13; Xaa Pos. 3,4,5,7,8 ✓
 Seq#:16; Xaa Pos. 2,9,16 ✓
 Seq#:18; Xaa Pos. 2,9,12,16 ✓
 Seq#:19; Xaa Pos. 48,49
 Seq#:20; Xaa Pos. 2,9,16,22,24,25
 Seq#:22; Xaa Pos. 2,9,16,22,25,26,27,28,29,30,31
 Seq#:23; Xaa Pos. 23,26
 Seq#:24; Xaa Pos. 10,14,17,23,26
 Seq#:26; Xaa Pos. 10,14,17,23,24,26,27,28,29,30,31,32
 Seq#:27; Xaa Pos. 23,24
 Seq#:28; Xaa Pos. 9,10,11,14,15,17,18,21,23,24
 Seq#:30; Xaa Pos. 9,10,11,14,15,17,18,21,26,27,28,29,30,31,32
 Seq#:31; Xaa Pos. 25,26
 Seq#:32; Xaa Pos. 10,17,23,25,26
 Seq#:34; Xaa Pos. 10,17,23,26,27,28,29,30,31,32
 Seq#:35; Xaa Pos. 22,23
 Seq#:36; Xaa Pos. 2,9,10,11,12,13,16,17,22,23,28
 Seq#:38; Xaa Pos. 2,9,10,11,12,13,16,17,25,26,27,28,29,30,31
 Seq#:39; Xaa Pos. 25,26
 Seq#:40; Xaa Pos. 3,10,17
 Seq#:45; Xaa Pos. 4
 Seq#:46; Xaa Pos. 4
 Seq#:49; Xaa Pos. 4,5
 Seq#:51; Xaa Pos. 3
 Seq#:52; Xaa Pos. 2
 Seq#:54; Xaa Pos. 4
 Seq#:55; Xaa Pos. 4
 Seq#:57; Xaa Pos. 10
 Seq#:59; Xaa Pos. 4,5
 Seq#:63; Xaa Pos. 4
 Seq#:65; Xaa Pos. 4,7
 Seq#:67; Xaa Pos. 4
 Seq#:69; Xaa Pos. 4,8
 Seq#:71; Xaa Pos. 3,4,5,8,9
 Seq#:73; Xaa Pos. 4
 Seq#:75; Xaa Pos. 4,5,6,7,8

Invalid <213> Response:

Use of "Artificial" only as "<213> Organism" response is incomplete, per 1.823(b) of New Sequence Rules. Valid response is Artificial Sequence.

Seq#:13

VERIFICATION SUMMARY

DATE: 02/08/2005

PATENT APPLICATION: US/10/522,810

TIME: 11:35:08

Input Set : A:\transmolecular5008wo.txt

Output Set: N:\CRF4\02082005\J522810.raw

L:10 M:270 C: Current Application Number differs, Replaced Current Application No
L:10 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:268 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13 after pos.:0
L:328 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:16 after pos.:0
L:390 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:18 after pos.:0
L:423 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:19 after pos.:32
M:341 Repeated in SeqNo=19
L:467 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20 after pos.:0
M:341 Repeated in SeqNo=20
L:568 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:22 after pos.:0
M:341 Repeated in SeqNo=22
L:593 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23 after pos.:16
L:632 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:24 after pos.:0
M:341 Repeated in SeqNo=24
L:729 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:26 after pos.:0
M:341 Repeated in SeqNo=26
L:758 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27 after pos.:16
L:822 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:28 after pos.:0
M:341 Repeated in SeqNo=28
L:939 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:30 after pos.:0
M:341 Repeated in SeqNo=30
L:968 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:31 after pos.:16
L:1007 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:32 after pos.:0
M:341 Repeated in SeqNo=32
L:1099 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:34 after pos.:0
M:341 Repeated in SeqNo=34
L:1128 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:35 after pos.:16
L:1197 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:36 after pos.:0
M:341 Repeated in SeqNo=36
L:1314 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:38 after pos.:0
M:341 Repeated in SeqNo=38
L:1342 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:39 after pos.:16
L:1376 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:40 after pos.:0
M:341 Repeated in SeqNo=40
L:1468 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:45 after pos.:0
L:1488 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:46 after pos.:0
L:1536 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:49 after pos.:0
L:1570 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:51 after pos.:0
L:1590 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:52 after pos.:0
L:1624 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:54 after pos.:0
L:1644 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:55 after pos.:0
L:1678 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:57 after pos.:0
L:1712 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:59 after pos.:0
L:1774 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:63 after pos.:0
L:1813 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:65 after pos.:0
L:1847 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:67 after pos.:0
L:1886 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:69 after pos.:0
L:1940 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:71 after pos.:0

VERIFICATION SUMMARY

DATE: 02/08/2005

PATENT APPLICATION: US/10/522,810

TIME: 11:35:08

Input Set : A:\transmolecular5008wo.txt

Output Set: N:\CRF4\02082005\J522810.raw

L:1974 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:73 after pos.:0

L:2028 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:75 after pos.:0